KATS, M.Ya.; REZNIKOV, P.P.; BARANOV, V.V.

Testing the isodynamic electromagnetic separator for minerals.
Izv. AN SSSR. Ser.geol. 27 no.7:106-114 Jl '62. (MIRA 15:6)

1. Geologicheskiy institut AN SSSR, Moskva.
(Magnetic separation of ores)

KATS, M.Ya.; BARANOV, V.V.

Gradient pipe without ultrathermostate and prospects for using it in mineralogical studies. Izv. AN SSSR Ser. geol. 28 no.9: 93-98 S '63. (MIRA 16:10)

1. Geologicheskiy institut AN SSSR. Moskva.

BARANOV, V.V., inzh.

Economic estimate of sewerage systems for combined sewers.
Gor. khoz. Mosk. 37 no.11:4-7 N '63. (MIRA 17:1)

1. TSentral'nyy nauchno-issledovatel'skiy i proyektno-konstruktorskiy institut podzemnogo i shakhtnogo stroitel'stva.

BARANOV, V.V.

Technical and economic advantage of building a combined city sewerage system for general use. Trudy TSNIIPodzemshakhtstroia no.2:195-207 '63.

Economic efficiency of developing a combined laying of communications in general type sewers. Ibid.:207-219
(MIRA 17:5)

ACCESSION NR: AP4041040 S/0120/64/000/003/0152/0157

AUTHOR: Kats, M. Ya.; Stadnikov, A. G.; Gol'din, L. L.; Baranov, V. V.

TITLE: Method for designing the pole shape for single-zone isodynamic magnetic separators

SOURCE: Pribory* i tekhnika eksperimenta, no. 3, 1964, 152-157

TOPIC TAGS: separator, magnetic separator, single zone magnetic separator, isodynamic magnetic separator

ABSTRACT: A method of calculating isodynamic fields is described; it is suitable for both the single-zone magnetic separator design and the measurements of magnetic susceptibility. Since the neutral pole obstructs the entrance into the gap, it is desirable that the isodynamic field be created without the neutral pole. Formulas that describe the pole shape ensuring a quasi-isodynamic field without the neutral pole are developed. Curves plotted in dimensionless coordinates

Card 1/2

BARANOV, V.V., master

Method for determining the causes of the maladjustment of loom dobbies. Tekst.prom. 25 no.1:47-48 Ja '65.

(MIRA 18:4)

1. Fabrika imeni S.M.Kirova, g.Ivanovo.

B[illegible]ANOV, V.V.

[illegible] of making a better use of [illegible] equipment in building [illegible] tunnels. Trudy TSNII [illegible]stroia no.3:135-144 '64. (MIRA 18:9)

SHOR, D.I.; [illegible], V.V.; GORYUSHKIN, V.N.; LEV, M.A.

[illegible] parameters for sectional reinforced-concrete linings in the horizontal underground mining by the shield method. Trudy TSNIIPodzemshakhtstroia no.3:144-158 '64. (MIRA 18:9)

PANCHENKOV, G.M.; BARANOV, V.Ya.

Kinetics of the thermal cracking of n-hexadecane in the flow.
Izv. vys. ucheb. zav.; neft' i gaz no.1:103-110 '58. (MIRA 11:8)

1.Moskovskiy neftyanoy institut im. akad. I.M. Gubkina.
(Hexadecane) (Cracking process) (Chemical reaction, Rate of)

PANCHENKOV, G.M.; BARANOV, V.Ya.

Standardization of a design for laboratory tube furnaces.
Izv. vys. ucheb. zav.; neft' i gaz no.6:77-79 '58. (MIRA 11:9)

1. Moskovskiy neftyanoy institut im. akad. I.M. Gubkina.
(Furnaces)

SOV/65-58-9-5/13

AUTHORS: Panchenkov, G. M. and Baranov, V. Ya.

TITLE: Thermal Cracking of n-Hexadecane as Homogeneous Systematic Reaction of the First Order Carried out in a Current. (Termicheskiy kreking n-geksadekana kak gomogennaya posledovatel'naya reaktsiya pervogo poryadka, provodimaya v potoke)

PERIODICAL: Khimiya i Tekhnologiya Topliv i Masel, 1958, Nr 9, pp 24 - 29. (USSR)

ABSTRACT: Thermal cracking of hydrocarbons is a complex reaction. It can be considered as an irreversible homogeneous reaction of the first order. Previous publications on the systematic investigation of these reactions are mentioned. (Ref.1 - 5). In an earlier report (Ref.7) the kinetics of thermal cracking of n-hexadecane were calculated. If the rate of cracking is taken as a measure of the yield of the fraction boiling at 285°, then this reaction can be considered as a systematic chemical reaction; this assumption is confirmed by the yield-curves of this fraction which pass through a maximum, and also by the fact that the curves showing the yield of the gas and of this fraction depend on the depth

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Thermal Cracking of n-Hexadecane as Homogeneous Systematic Reaction of the First Order Carried out in a Current.

of conversion of the starting material (Fig.1). The reaction proceeds according to the following equation:

$$A \xrightarrow{k_1} \nu_1 A_1 + \nu_2 A_2 + \nu_3 A_3 \xrightarrow{k_2} \nu_4 A_1 + \nu_5 A_2$$

where A = the starting material, A_1 = the gas, A_2 = the condensation products, ν = the corresponding stoichiometric coefficients and k_1 and k_2 = the rate constants of the first and second cracking stage. The yield of the "intermediate product" A_3 and of the two rate constants of the thermal cracking process are calculated. If n-hexadecane is subjected to cracking at 520°, 550° and 580°C the rate constants of the first and second stage of the reaction are identical (Fig.2). The stoichiometric coefficients ν_3 for the fraction boiling at 285° is taken as "intermediate product". The theoretically calculated yields of this fraction were substantially identical to those obtained during practical experiments (Fig.4). If the depth of conversion of n-hexadecane

Thermal Cracking of n-Hexadecane as Homogeneous Systematic Reaction of the First Order Carried out in a Current.

is below 0.6 the equation for the homogeneous first order reaction changes into a simple first order reaction proceeding in the current. There are 4 Figures, 7 References: 2 English and 5 Soviet.

ASSOCIATION: MNI im. akad. Gubkina

1. Hydrocarbons--Fractionation 2. Hydrocarbons--Chemical reactions
3. Mathematics

Card 3/3

5(4)

AUTHORS: Panchenkov, G. M., Baranov, V. Ya.

SOV/20-126-3-42/69

TITLE: The Kinetics of the Thermal Cracking of Hydrocarbons (Kinetika termicheskogo krekinga uglevodorodov)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 3, pp 608-611 (USSR)

ABSTRACT: In the introduction to the present paper it is pointed out that the exact deduction of the equation for the kinetic reaction in cracking is not possible, and equation (1) gives the conversion of the initial substance into a number of products. In the following, equation (2) is developed, from which it may be seen that the rate of cracking depends on the rate of two processes: On the rate of decay of the molecule of the initial substance and on the process of the interaction of the radicals with the molecules of the initial substance. It follows further that the concentration of radicals exercises a considerable influence upon this rate. Equation (3) gives the rate of radical formation, and formula (5) is obtained for the condition of the steady fraction of the radicals by means of the hitherto obtained results from formula (1). This formula (5) is then given according to a previous paper by G. M. Panchenkov by formula (6) for the case in which cracking is continuous. By integration, formula (8) is obtained from this

formula (6). In a similar manner, the same development is made for the cracking of benzine, and formula (14), which is analogous to formula (8), is obtained. Finally, a diagram (Fig 1) shows the results obtained according to formula (8). The experiments were carried out at 510, 540 and 570° C and at atmospheric pressure, and show a constant rate of cracking and an activation energy of 55 kcal/mol. There are 1 figure and 2 Soviet references.

ASSOCIATION: Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti im. I. M. Gubkina (Moscow Institute for the Petroleum-chemical and Gas Industry imeni I. M. Gubkin)

PRESENTED: February 19, 1959 by A. V. Topchiyev, Academician

SUBMITTED: February 18, 1959

S/195/60/001/002/001/010
B004/B067

AUTHORS: Panchenkov, G. M., Baranov, V. Ya.

TITLE: Kinetics of Thermal Cracking of Hydrocarbons and Their Mixtures

PERIODICAL: Kinetika i kataliz, 1960, Vol. 1, No 2, pp. 188 196

TEXT: The authors attempted to derive a kinetic equation for the cracking of hydrocarbons. Proceeding from the radical chain reaction $A \rightarrow \nu_1 A_1 + \nu_2 A_2 + \dots \nu_n A_n$ (a) (A initial substance, A_i reaction products, ν_i stoichiometric coefficients) they write: $W_1 = k[R][A]$ (2) (W_1 reaction rate, $[R]$, $[A]$ concentration of radicals and initial substance) and $W_1 = k_1[A] + k_2[R][A]$ (3). This equation takes into account the possible effect of two processes on the reaction rate: a) decomposition of the initial molecules into free radicals; b) reaction between free radicals and initial molecules. Furthermore, the rate W_2 is derived for the formation of free radicals. The following is assumed: 1) The

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radicals are formed by collision or by a monomolecular decomposition of the initial molecules; 2) the free radicals are consumed by reaction with the initial molecules. The interaction among the free radicals is negligibly small due to their low concentration. The authors write $W_2 = k_3[A]^2 + k_1[A] - k_4[A][R]$ (4). Taking account of the s... they obtain: $[R] = (k_3/k_4)[A] + k_1/k_4$ (5) By substituting (... or (3) one obtains $W_1 = k'\{1 + k_3'[A]\}[A]$ (6), where $k' = k_2k_1/k_4$, $k_3' = k_3/k_1$ if (5) was substituted in (2), and $k' = (k_1k_4 + k_1k_2)/k_4$, $k_3' = k_2k_3/(k_1k_4 + k_2k_1)$ if (5) was substituted in (3). At low pressure, the collision among the initial molecules does not essentially con tribute to the formation of radicals, and equation (6) will be of first order. The following relation is written for thermal cracking in con tinuous flow and gaseous state, the results of Ref. 3 being taken into account: $n_o dx/\varrho dl = k'\{1 + k_3'C_A\}C_A$ (7) and by using the equation for ideal gases, one obtains $C_A = (1 - x)P/(1 + \beta x)RT$ (8) n_o denotes the

number of moles of the initial substance entering the reaction zone per unit time; x denotes the amount of initial substance entering into reaction; $\beta = \nu_1 + \nu_2 + \ldots - 1$; P total pressure. Substitution of (8) in (7) and integration give $n_0 x = -(A/B)n_0 \ln(1 - x) - k'PV_r/BR^2T^2$ (9), where $A = (1+\beta)^2/m+n$; $B = \beta^2/n+(\beta/m)(2+\beta-m\beta/n) - (1+\beta)^2 n/m(m+n)$; $m = RT + k_3'P$; $n = \beta RT - k_3'P$; V_r = volume of the reaction zone. For the case where cracking takes place under the decomposition of an intermediate product, $A \rightarrow \nu_1 A_1 + \nu_2 A_2 + \nu_3 A_3 \rightarrow \nu_4 A_1 + \nu_5 A_2$, where A is the initial substance, A_1 gas, A_2 coke, and A_3 gasoline (as intermediate), a similar equation (14) was derived. The authors, however, used equation (9) to evaluate the experiments on the cracking of fractions of paraffin containing Groznyy and Romashkino petroleum, and calculated the constants of this equation. They observed a pressure and temperature dependence of A/B. With a pressure change between 1 and 50 atm, the rate constant passes through a maximum at approximately 10 atm, which becomes more distinct at increased

Kinetics of Thermal Cracking of Hydrocarbons and Their Mixtures

S/195/60/001/002/001/010
B004/B067

temperatures. A. V. Frost and A. I. Dintses, A. D. Stepukhovich, M. G. Gonikberg, and V. V. Voyevodskiy are mentioned. There are 2 figures, 1 table, and 9 Soviet references.

ASSOCIATION: Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti im. I. M. Gubkina (Moscow Institute of Petrochemical and Gas Industry imeni I. M. Gubkin)

SUBMITTED: December 21, 1959

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S/152/60/000/008/006/007/XX
B004/B064

AUTHORS: Panchenkov, G. M., Baranov, V. Ya.

TITLE: The Kinetics of the Thermal Cracking of Petroleum Products

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Neft' i gaz, 1960, No. 8, pp. 79 - 86

TEXT: The authors report on the thermal cracking of the fraction 310 - 410°C of the paraffin containing Groznyy petroleum. The experiments were carried out at 510, 540, 570, 600, and 630°C. The experimental data were evaluated by means of equations obtained in the course of previous studies (Refs. 7-9). $n_o x = -(A/B)n_o \ln(1 - x) - k'pV_r/BR^2T^2$ (2) is written down as radical-chain mechanism for the reaction. n_o denotes the moles of the initial substance introduced into the reaction zone in the unit time; x is the portion of the initial substance entered into reaction, A,B: constants, k' is the rate constant of the reaction, p - the total gas pressure, V_r - the volume of the reaction zone. For the function

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The Kinetics of the Thermal Cracking of Petroleum Products

S/152/60/000/008/006/007/XX
B004/B064

$n_0x = f[n_0 \ln(1 - x)]$ a straight line with the tangent A/B was obtained. k' was calculated by the equation $k' = -ADn_0 \ln(1 - x) - BDn_0 x$ (8), where $D = R^2T^2/pV_r$. A table gives the following values for the coefficients of the equation (8):

T°C	A/B	$D \cdot 10^{-4}$	$k' \cdot 10^3$ sec^{-1}
510	0.956	6.87	2.64
540	0.878	7.41	10.90
570	0.850	7.96	34.40
600	0.665	8.54	34.80
630	0.604	9.13	49.70

On the assumption of a consecutive reaction the following equation was derived:

$$x_{A_3} = [\nu_3/(1-K)][(1-x)^K - (1-x)] \quad (3).$$

ν_3 is the stoichiometric coefficient of the reaction product A_3, $K = k_2/k_1$ is the ratio of the reaction rate constants of the first and second stage of the reaction. This equation was graphically solved. The activation energy of the first stage was found to be 56,400 cal/mole, of the second to be 67,000 cal/mole. Between 510 - 570°C, the temperature coefficient of the first stage is 1.53, of the second 1.66. A. D. Stepukhovich is mentioned There are 3 figures,

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The Kinetics of the Thermal Cracking of Petroleum Products

S/152/60/000/008/006/007/XX
B004/B064

1 table, and 9 references: 6 Soviet and 3 US.

ASSOCIATION: Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti im.akad.I.M.Gubkina (Moscow Institute of the Petrochemical and Gas Industry imeni Academician I.M.Gubkin)

SUBMITTED: July 6, 1959

Card 3/3

PANCHENKOV, G.M.; BARANOV, V.Ya.

Kinetics of thermal cracking of petroleum products. Izv. vys. uchob. zav.; neft' i gaz 3 no.8:79-86 '60. (MIRA 14:4)

1. Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti imeni akademika I.M.Gubkina.
(Cracking process)

PANCHENKOV, G.M.; BARANOV, V.Ya.

Effect of pressure on the kinetics of thermal cracking. Izv. vys. uchob. zav.; neft' i gaz 3 no.10:93-98 '60. (MIRA 14:4)

1. Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti imeni akademika I.M.Gubkina.
(Cracking process)

2

BARANOV, V.YA., KOLESNIKOV, I.M., ZHOROV, YU.M.,

Kinetics of chemical processes in oil refining and petrochemistry in flow-type reactors

Report to be sumitted for the Sixth World Petroleum Congress, Frankfurt, 16-26 June 63

FANCHENKOV, G.M.; BARANOV, V.Ya.

Kinetics of the thermal cracking of individual hydrocarbons and oil fractions. Trudy MINKHiGP no.44:214-219 '63.

(MIRA 18:5)

ACC NR: AP7000054 SOUCE CODE: UR/0207/66/000/005/0107/0112

AUTHOR: Baranov, V. Yu. (Moscow); Musin, A. K. (Moscow); Timofeyeva, G. G. (Moscow)

ORG: none

TITLE: Kinematics of the current-carrying layer in a plasma accelerator

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 5, 1966, 107-112

TOPIC TAGS: plasma, plasma acceleration, plasma ~~bunch~~ accelerator, charged particle, plasma flow

ABSTRACT: The results of analytical and experimental investigations of the dependence of kinematic characteristics of quasi-neutral bunches of charged particles in "rail-type" accelerators on the electrical and geometric parameters of the accelerating circuit are compared. Proceeding from previous findings by one of the authors (A. K. Musin, Radiotekhnika i elektronika, v. 7, no. 10, 1962), the movement of a plasma bunch along the electrodes as a function of their erosion is described by an equation which can be approximately solved by an asymptotic method applicable to nonlinear oscillations with strong attenuation. The magnitudes characterizing the process of acceleration (current in the plasma, velocity of the current-carrying layer, momentum and mass of the bunch,

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and the energy transfer coefficient) can then be numerically determined and their behavior qualitatively described. The main features of the rail-type plasma accelerator used for experimental investigations of the kinematics of bunches are diagrammatically shown. Two parallel copper bars 2.5 cm wide, 0.15 cm thick, and 37 cm long served as guiding electrodes (rails). The distance between them could be varied between 0.5 and 5.5 cm. The plasma source was the discharge current from a 50—300μF condenser at 0.5 to 7 kv between the rails, initiated by the breakdown of a shot of gas introduced between the rails beginning. The pressure of residual gases in the accelerator did not exceed 10^{-4} mm Hg. The velocity of the bunches was determined by double probes between the guiding rails. The momentum of the bunches was measured by ballistic pendulums suspended at the end of the track. The measurement results, presented in a number of graphs, show the interrelationship of the characteristic parameters along with the analytical data. The main conclusions drawn from the investigation are: 1) that, in case of low erosion, the limit speed of the plasma is proportional to the initial electrical energy and the inductivity gradient of the accelerating circuit, and inversely proportional to the mass of gas moved with the current; in case of strong erosion, the speed of the plasma is a function mainly of the initial voltage of the condenser, since its own mass grows fast in the process, which greatly reduces the acceleration. 2) The end momentum of the bunch does not depend on the mass of gas, but

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ACC NR: AP7000054

is a linear function of the condenser capacitance, the inductivity gradient of the circuit, and the square of the initial voltage. 3) The energy transfer, in case of low erosion, is a linear function of the initial electrical energy and the square of the inductivity gradient. In case of high erosion, only the inductivity gradient remains effective, together with the initial voltage. Orig. art. has: 7 figures and 9 formulas. [WA-71]

SUB CODE: 20/ SUBM DATE: 190ct65/ ORIG REF: 005/ OTH REF: 001

Card 3/3

ACC NR: AP6033950 SOURCE CODE: UR/0294/66/004/005/0621/0624

AUTHOR: Baranov, V. Yu.

ORG: All-Union Electrotechnical Institute im. I. V. Lenin (Vsesoyuznyy elektrotekhnicheskiy institut)

TITLE: Certain effects observed in the study of an electric arc in a gas stream

SOURCE: Teplofizika vysokikh temperatur, v. 4, no. 5, 1966, 621-624

TOPIC TAGS: electric arc, gas jet, gas ionization, electric discharge ionization, discharge plasma, electron distribution

ABSTRACT: This is a continuation of earlier work (Teplofizika vysokikh temperature v. 2, no. 5, 1964) devoted to the use of an arc as a preliminary ionizer of a magnetohydrodynamic generator. The purpose of the present investigation was to elucidate the physical processes that accompany the flow of electric current through a stream of neutral and ionized gas. An electric arc placed transverse to the motion of the gas was investigated in both decelerating and accelerating magnetic fields. The apparatus was the same as described in the earlier paper. The measurements yielded the distribution of the electrons in an argon-cesium plasma at different stream velocities when two arcs are used, the first serving as a pre-ionizer for the second. The results show that in the presence of preliminary ionization, the distribution of the concentrations of the arc in the gas stream becomes homogeneous and constant in time, and the arc channel diameter increases. Application of a magnetic field of a prescribed value

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Card 2/2

ACC NR: AP6033950

leads to a more uniform distribution of the current, but owing to constriction of the arc diameter it may affect adversely the ionizing ability of the arc. The author is grateful to I. A. Vasil'yeva and K. N. Ul'yanov for a discussion of the work. Orig. art. has: 3 figures and 1 formula.

SUB CODE: 20/ SUBM DATE: 18Dec65/ ORIG REF: 004/ OTH REF: 002

ACCESSION NR: AP4017598 S/0109/64/009/002/0283/0292

AUTHOR: Baranov, V. Yu.; Musin, A. K.

TITLE: Role of diffusion and viscous friction in the process of plasma acceleration

SOURCE: Radiotekhnika i elektronika, v. 9, no. 2, 1964, 283-292

TOPIC TAGS: plasma, plasma physics, plasma acceleration, plasma diffusive dissipation, plasma viscous friction, plasma cluster, plasma cluster motion

ABSTRACT: A simplified analysis of the motion of a plasma cluster in a plasma accelerator is offered; an allowance is made for both the diffusive dissipation of neutral particles present in the plasma and the continuous influx of new particles formed in the process of guiding-electrode erosion. It is assumed that the ionization $\alpha = (1 + (n_0/n_i))^{-1}$ is small and that the seeping of charged particles across the magnetic field can be neglected. Equations describing the motion of a

ACCESSION NR: AP4017598

The principal conclusions drawn are: (1) Optimum lengths of a plasma accelerator exist at which a maximum velocity and a maximum momentum of the plasma cluster are attained or a max coefficient of the conversion of electric energy stored in the accelerating circuit into kinetic plasma energy is realized; (2) The optimum length increases with the initial voltage and capacitance of the accelerating circuit; (3) The plasma-cluster mass may considerably exceed that of the gas admitted to the accelerator; (4) The velocity maximum corresponds to the condition when the electrodynamic forces and the friction forces affecting the cluster are equal; (5) The maximum of momentum arrives when the process of cluster acceleration and its mass diffusive dissipation are at equilibrium. "The authors thank V. L. Granovskiy, O. A. Malkin, G. G. Timofeyeva, and M. F. Shirokov for their attention and interesting discussions." Orig. art. has: 4 figures and 30 formulas.

ASSOCIATION: none

SUBMITTED: 10May63 DATE ACQ: 18Mar64 ENCL: 00

SUB CODE: GE NO REF SOV: 010 OTHER: 006

L 12034-65 EWT(m)/EPF(c)/EPF(n)-2/EPR/EWP(b) Pr-4/Ps-4/Pu-4 ASD(p)-3/SSD/ASD(f)-2/BSD/AEDC(a)/AEDC(b)/AFETR/AFWL/RAEM(c)/RAEM(a)/ESD(gs)/ESD(si)/ESD(t)
ACCESSION NR: AP4047370 JD S/0294/64/002/005/0672/0680

AUTHORS: Baranov, V. Yu.; Vasil'yeva, I. A.

TITLE: An electric arc in a stream of argon

SOURCE: Teplofizika vy*sokikh temperatur, v. 2, no. 5, 1964, 672-680

TOPIC TAGS: electric arc, plasma jet, magnetohydrodynamics/ Zorkiy 6 camera, SFR 1M motion picture camera, Schottky flow measurement

ABSTRACT: The external form and electrical properties of an arc in a stream of spectrally pure argon were studied at pressures of 0.1-60 mm Hg, flow rates 10^2 - 10^4 cm/sec, and arc currents 0.4 - 20 amp. These properties are of concern in producing high-temperature plasma jets and in the disruption of arcs by currents. These bear on the problem of energy conversion by the magnetohydrodynamic process. Figure 1 on the Enclosure shows the experimental setup. Plasma variables were measured at various points by the cylindrical probe (0.8 mm diameter and 4 mm long). The argon flow, perpendicular to the test arc, was precisely controlled by the electromagnetic pump, the magnetic field of which was shielded from the test arc. Gas temperature was measured by a tungsten helix (5). The luminosity distribution of the arc was recorded by a "Zorkiy-6" camera, using 32 GOST film. A loop

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oscillograph registered the arc voltage, while the volt-ampere characteristics of the arc were taken in still and moving argon. The anode (8) motion made it possible to determine the electric field intensity. An SFR-1M motion picture camera measured the flow rate by spark marks. Below 10 mm Hg pressure the spark energy was insufficient, and the Schottky method of flow rate measurement was used (W. Schottky and J. Issendorf, Z. Phys., 13, 163, 1925). The gas pressure displaced the arc. The flow rate and the arc current had a significant effect on the external arc form and its position. The arc displacement grew monotonically with increased flow rates up to a certain critical speed v_c. The flow effect was caused by the interaction between the argon molecules and the transverse motion of the ions and electrons passing between electrodes. The electrons moved too quickly to be affected, but a part of the argon molecule motion was transferred to the ions, principally by the supercharge process. The process was complicated because the bent arc distorted the charge distribution, the flow was nonuniform through the tube cross section, and the passing gas was unevenly heated. The results break down into three groups: 1) with $v < v_c$ the arc in the stream is bent while remaining compact, and the bending increases with increased flow rates and gas pressures; 2) with $v \geqslant v_c$ the breakdowns of the moving gas along a span of the bent arc are caused by the growth of the electric field intensity between electrodes; 3) with $v \gg v_c$ the arc assumes a diffused appearance, caused by consecutive breakdowns, the

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ACCESSION NR: AP4047370

frequency of which grows with increased flow speeds. The authors thank Professor V. L. Granovskiy (deceased) for his interest. Orig. art. has: 8 figures and 1 table.

ASSOCIATION: Vsesoyuzny*y elektrotekhnicheskiy institut im. V. I. Lenina (All-Union Electrical Engineering Institute)

SUBMITTED: 21Jun64

ENCL: 01

SUB CODE: EM, TD

NO REF SOV: 006

OTHER: 006

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ACCESSION NR: AP4047370

ENCLOSURE: 01

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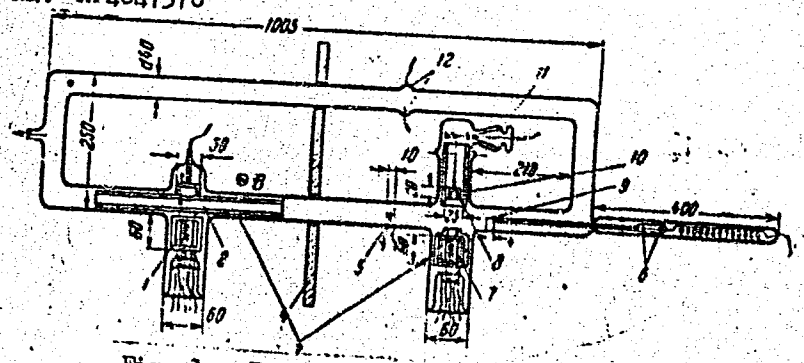

Fig. 1. Experimental tube

1 - pump arc oxide cathode; 2 - pump arc anode; 3 and 10 - quartz shields; 4 - iron shield; 5 - heated wire; 6 - armature; 7 - test arc oxide cathode; 8 - test arc anode; 9 - movable probe; 11 - glass sliding joint; 12 - electrodes for spark activation in the stream.

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L 62189-65 EWT(l)/EWT(m)/EPF(n)-2/EWG(m)/EWP(v)/EPA(w)-2/T/EWP(t)/EWP(k)/EWP(b)/EWA(c) Pz-6/Pe-4/Pf-4/Pi-4 IJP(c) JD/WW/HM/AT

ACCESSION NR: AP5010456 UR/0294/65/003/002/0173/0185

533.9.15:537.52:536.5

AUTHORS: Baranov, V. Yu.; Vasil'yeva, I. A.

TITLE: Investigation of a nonisothermal plasma of an arc in a stream of argon

SOURCE: Teplofizika vysokikh temperatur, v. 3, no. 2, 1965, 173-185

TOPIC TAGS: nonisothermal plasma, arc plasma, pressure effect, gas stream, probe measurement, electron temperature, electron density

ABSTRACT: This is a continuation of earlier work by the authors (Teplofizika vysokikh temperatur v. 2, 5, 1964). It is aimed at determining the influence of a gas stream on the nonequilibrium state of a plasma of a dc arc. A probe method was used to investigate the distribution of the concentrations n_e and the temperature T_e of the electrons along a stream of argon flowing through the dc arc. The temperature of the gas in the arc column and its vicinity was deter-

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ACCESSION NR: AP5010456

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mined with an incandescent filament. The measurements were made at pressures from 0.15 to 100 mm Hg, arc currents from 1 to 5 A, and stream velocities from 10^2 to 5×10^3 cm/sec. Various factors governing the distribution of the electrons under the temperature are disclosed as a result of the investigation. It is shown in the conclusion that the procedure described makes it possible to investigate the disappearance of particles from an arc. 'The authors thank the late Professor V. L. Granovskiy for interesting and useful discussions.' Original article has: 7 figures, 6 formulas, and 3 tables

ASSOCIATION: Vsesoyuznyy elektrotekhnicheskiy institut im. V. I. Lenina (All-Union Electrotechnical Institute)

SUBMITTED: 19Sep64 ENCL: 00 SUB CODE: ME

NR REF SOV: 011 OTHER: 011

Card 2/2

L 45979-66 EWT(1) IJP(c) AT

ACC NR: AP6028611 SOURCE CODE: UR/0057/66/036/008/1387/1393

56
B

AUTHOR: Baranov, V.Yu.; Musin,A.K.; Timofeyeva,G.G.

ORG: All-Union Electrotechnical Institute im. V.I.Lenin, Moscow (Vsesoyuznyy elektrotekhnicheskiy institut)

TITLE: Diffusive spread of a plasma condensation and the optimum length of a plasma accelerator

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 8, 1966, 1387-1393

TOPIC TAGS: plasma acceleration, plasma gun, plasma electron temperature, plasma velocity

ABSTRACT: Two of the authors have previously given a theory of the acceleration of plasmas in a rail accelerator, in which the effects of electrode erosion and diffusive scattering of the plasma particles were taken into account and from which it was concluded that there are optimal lengths of the plasma gun for maximum energy of the plasma, maximum momentum of the plasma, and maximum efficiency (V.Yu.Baranov and A.K. Musin, Radiotekhnika i elektronika, 9, No.2, 283, 1964). This theory has been confirmed in part by experiments of A.D.Timofeyev, V.G.Marginin, B.A.Shevchuk, and A.A.Kalmykov (ZhTF, 35, No.5, 858, 1965). The present paper reports experiments undertaken during 1960 and 1961 in order further to test this theory and to investigate factors that were not included in the theory. Plasmas were produced and accelerated by the 0.5 to 7 kV

UDC: 533.9

Card 1/2

discharge of 110 uF capacitor in a coaxial or rail accelerator from 0.1 to 43.0 cm long. The electrode diameters in the coaxial accelerator were 1.0 and 3.3 cm, and the rail accelerator was so designed as to have the same inductance per unit length. In most of the experiments the pressure was kept below 10^{-3} mm Hg. The velocities of the plasmas were measured with the aid of two double probes, and their momenta were measured with a dynamic pendulum. High speed cinematograms and streak photographs were obtained of the plasmas in the rail accelerator. The results of the experiments were in qualitative agreement with the theory. The optimum length of the accelerator for maximum momentum was less than that for maximum kinetic energy. This is ascribed to the greater significance of the velocity for the energy than for the momentum. Motion of a portion of the plasma in the backward direction was detected and is ascribed to thermal expansion of the plasma. The backward momentum of the plasma decreased with increasing gas pressure (up to 10^{-2} mm Hg), whereas the forward momentum was almost independent of the pressure. This influence of the pressure on the backward momentum is ascribed to the cooling effect of the residual gas on the plasma electrons. It is concluded that there are optimum lengths of the plasma gun for maximum velocity of the plasma, maximum momentum of the plasma, and maximum efficiency of the conversion of electrical energy into kinetic energy of the plasma; that these optimum lengths are determined by the equilibrium between the acceleration process, friction, and diffuse scattering of the plasma; and that thermal expansion of the accelerated plasma in its center of mass system takes place and has a measurable influence on the characteristics of the accelerated plasma bursts. Orig. art. has: 10 figures.

SUB CODE: 20 SUBM DATE: 18Aug65 ORIG. REF: 006 OTH REF: 002

Card 2/2 JS

BARANOV, Ya.P., starshiy radiotekhnik

Some specific features of radio communication in Antarctica. Inform. biul. Sov. antark. eksp. no.26:39-41 '61. (MIRA 14:7)
(Antarctic regions—Radio)

BABANOV, Ya.V. [deceased]; [illegible], S.I.

Continuous operation-type concrete [illegible]. Mekh. stroi. no.41: 35-39 '64. (MIRA 17:11)

BARANOV, Ye.

Simple method for testing quality of gas rectifiers. Radio no.7:24 Jl '54. (MLRA 7:7)
(Radio--Rectifiers)

BARANOV, Ye.; VOROTNIKOV, A.

Floating dosimeters for measuring coagulating agents. Zhil.-kom.khoz. 9 no.10:26-27 '59. (MIRA 13:2)
(Water--Purification)

BARANOV, Ye.

Mixed brigades in the canning industry. Biul.nauch. inform.: trud i zar. plata 5 no.3:33-38 '62. (MIRA 15:3)
(Canning industry)

BARANOV, Ye. A.

Cand Tech Sci - (diss) "Study of the hydrodynamic principles of washing of filtering loads." Moscow, 1961. 17 pp; (Ministry of Higher and Secondary Specialist Education RSFSR, Moscow Order of Labor Red Banner Construction Engineering Inst imeni V. V. Kuybyshev); number of copies not given; price not given; (KL, 7-61 sup, 231)

BARANOV, Ye.A.

Washing coarse-grained layers of filter media. Sbor. nauch. rab. asp. AKKH no.1 ...-69 '59. (MIRA 14:7)
(Filters and filtration)

BARANOV, Ye.A.

Discharge coefficient for orifices of tubular distribution systems of filters. Sbor. nauch. rab. asp. AKKH no.1:85-103 '59. (MIRA 14:7)
(Filters and filtration)

SHURYGIN, V.P., kand. tekhn. nauk; BARANOV, Ye.A.

Characteristics of the maintenance and operation of reinforced concrete constructions of overhead contact systems. Elek. i tepl. tiaga 7 no.10:16-18 O '63. (MIRA 16:11)

1. Rukovoditel' laboratorii elektrifikatsii zheleznykh dorog Vsesoyuznogo nauchno-issledovatel'skogo instituta transportnogo stroitel'stva (for Shurygin). 2. Starshiy inzh. Glavnogo upravleniya elektrifikatsii i energeticheskogo khozyaystva Ministerstva putey soobshcheniya (for Baranov).

BARANOV, Ye.A.

Conference for the examination of the standard norms of production.
Kons. i ov.prom. 18 no.9:43-44 S '63. (MIRA 16:9)
(Canning industry--Production standards)

BAPANOV, Ye. G.

"On the Question of Determining the Size of Elongated Blasting Charges." Sub 28 Dec 51, Moscow Inst of Nonferrous Metals and Gold imeni M. I. Kalinin.

Dissertations presented for science and engineering degrees in Moscow during 1951.

SO: Sum. No. 480, 9 May 55.

15-57-5-7081

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 5, pp 191-192 (USSR)

AUTHOR: Baranov, Ye. G.

TITLE: Experiments on Short-Time Delayed Action Blasting of VV Charges (Opytnyye raboty po ustanovleniyu usloviy vozmozhnogo primeneniya korotkozamedlennogo vzryvaniya zaryadov VV)

PERIODICAL: V sb: Korotkozamedl. vzryvaniye v gorn. dele, Moscow, Ugletekhizdat, 1956, pp 13-32

ABSTRACT: Studies on the efficiency of short-time delayed action blasting were conducted by a group from the Institute of Nonferrous Metals and Gold in one of the nonferrous metal mines. The subjects of study were as follows: 1) the suitability of I. P. Leont'yev's instrument as a means of short-time delayed action blasting; 2) the possibility of use of present

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Experiments on Short-Time Delayed Action Blasting (Cont.)

electric instantaneous action detonators in connection with this instrument; 3) the appropriate conditions for use of short-time delayed action blasting. The VED-L-1 instrument designed by Leont'yev insures intervals in feeding of the current with an accuracy of ± 5 percent for the following types of work: 1) cutting of horizontal passages and for large-scale blasting of cleared chambers in mines; 2) making railroad cuts and blasting in open pit mines. The instrument operated precisely in over 100 blasts. Its operation is safe. The characteristics of present electric detonators with a constantan bridge 50 (!) in diameter were studied oscillographically. The tests showed that the time of delay of electric detonators with a resistance of 0.85 to 1.4 ohms varied from 16 to 56 m/sec and averaged 29.4 m/sec with currents of 1.5 to 12 amp. The deviations in delay decreased and amounted to 6.5 to 21 m/sec with current exceeding 15 amp; the average delay was 11.2 m/sec. Hence new detonators which will insure less deviation in time of delay are needed. Delays of 40 to 80 seconds proved to be most effective for the

Experiments on Short-Time Delayed Action Blasting (Cont.)

conditions of the open-pit mine in which the tests were conducted. The optimum delay depends on the strength of the rock and the position of the bore holes. The rocks here have a coefficient of resistance of 8 to 13, according to Protod'yakonov. Tests in blasting gabbro-diabases on open faces 10 m high in open-pit mines showed the possibilities of: 1) decreasing the extent of collapse by 1.4 times; 2) increasing the distance between bore holes from 3.5 m or 4 m to 5 m; 3) increasing the yield of rock per 1 linear m of bore hole from 75 T to 110 T; 4) reducing the cost of drilling by 30 to 50 percent; 5) reducing the debris zone by 30 to 50 percent; 6) reducing the yield of oversize material; 7) reducing the expense of repairs by 2 or 3 times. The author believes that short-time delayed action may be effective in: 1) improving the breaking up of rock with a Protod'yakonov resistance coefficient of 14 to 15; 2) improving the general criteria in blasting of rock with a resistance coefficient of 8 to 12; 3) reducing the seismic action on industrial buildings and dwellings.

Card 3/3

L. N. M.

14(5) PHASE I BOOK EXPLOITATION SOV/2769

Baranov, Yevgeniy Gerasimovich, Pavel Stepanovich Danchev, Konstantin Ivanovich Ivanov, Vladimir Olimpiyevich Mal'chonok, Aleksey Dmitriyevich Pashkov, and Aleksandr Nisanovich Khanukayev

Issledovaniye protsessov bureniya i vzryvaniya s primeneniyem kinos"yemki (Photographic Study of Drilling and Blasting Processes) Moscow, Ugletekhizdat, 1959. 186 p. 2,000 copies printed.

Ed.: K.V. Pavlov; Ed. of Publishing House: T.I. Koroleva; Tech. Ed.: A. Sabitov.

PURPOSE: The book is intended for scientists and engineers in the mining industry. It may also be used as a textbook in institutes of higher technical training.

COVERAGE: The book contains the results of a photographic study of drilling and blasting processes. Analysis of the operation of perforators and percussive drilling rigs, and the study of explosion phenomena by filming helped to reveal

Card 1/5

the physical nature and the regularities of high-speed processes and to indicate ways and means of increasing the efficiency of drilling and blasting work. Photographic work was done at the Central Film Laboratory of the MVO by B.V. Frantsisson and B.G. Sukhov. The author thanks M.M. Dokuchayev. There are 56 references: 48 Soviet, 4 English, 3 German, and 1 French.

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12-30-59

KURMANALIYEV, T.I.; BARANOV, Ye.G., otv. red.; SEMIKINA, T.F., red. izd-va; ANOKHINA, M.G., tekhn. red.

[Flotation of lead in Aktyuz]Svintsovaia flotatsiia na Aktiuze. Frunze, Izd-vo AN Kirgizskoi SSR, 1960. 41 p. (MIRA 15:9)

(Aktyuz region--Flotation) (Lead)

SHESTAKOV, V.A.; BARANOV, Ye.G., red.; SEMIKINA, T.F., red.izd-va; ANOKHINA, M.G., tekhn.red.

[Investigating the breaking and the drawing of ore from blocks in forced top-caving systems] Issledovanie otboiki i vypuska rudy iz blokov pri sisteme etazhnogo prinuditel'nogo obrusheniia. Frunze, Akad.nauk Kirgizskoi SSR, Otdel gornogo dela i metallurgii, 1960. 129 p. (MIRA 13:12)

(Mining engineering)

S/081/61/000/019/061/085
B117/B110

AUTHORS: Baranov, Ye. G., Mosinets, V. N.

TITLE: Study of blasting characteristics of industrial explosives depending on their moisture content

PERIODICAL: Referativnyy zhurnal, Khimiya, no. 19, 1961, 406, abstract 19L462 (Izv. AN KirgSSR. Ser. yestestv. i tekhn. n., v. 2, no. 2, 1960, 65 - 90)

TEXT: The authors tried to estimate the resistance to water of a number of ammonites (A) and the possibility of using them in powder form in watered boreholes by determining their explosive effect and the working capacity of A mixtures with different amounts of water (0 - 67%). Ammonites no. 6ЖВ(6ZhV), B-3 (V-3), BA-4 (VA-4), mining explosive no. 1, and mixtures of no. 6ZhV with trotyl, were tested. Most of the tests gave incomplete explosion due to a small explosive charge (diameter 40 mm) and an insufficient initial impulse (detonator no. 8) In the author's opinion, the mining explosive no. 1, and VA-4, are best suited for work in water among the ammonites tested. Ammonites in compressed form or in

Card 1/2

Study of blasting characteristics...

S/081/61/000/019/061/085
B117/B110

the form of cartridges should be used in boreholes with an intense water flow. [Abstracter's note: Complete translation]

Card 2/2

BARANOV, Ye.G.; GAGULIN, M.V.

Methods of calculating borehole charge parameters in underground ore breaking. Izv. AN Kir. SSR. Ser. est. i tekh. nauk 2 no.8:13-22 '60. (MIRA 13:12)
(Mining engineering) (Blasting)

BRONNIKOV, Dmitriy Mikhaylovich, doktor tekhn. nauk; BARANOV, Ye.G., kand. tekhn. nauk, retsenzent; MALKIN, I.M., kand. tekhn.nauk, retsenzent; KUTUZOV, D.S., gorn. inzh., retsenzent; PARTSEVSKIY, V.N., red. izd-va; LOMILINA, L.N., tekhn. red.

[Choice of blasthole parameters in underground ore breaking] Vybor parametrov vzryvnykh skvazhin pri podzemnoi otboike rud. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1961. 109 p. (MIRA 14:12)

(Boring) (Blasting)

KHANUKAYEV, Aleksandr Misanovich; BARANOV, Yevgeniy Gerasimovich; MOSINETS, Vladimir Nikolayevich; MUKHIN, M.Ye., otv. red.; SEMIKINA, T.F., red. izd-va; ANOKHINA, M.G., tekhn. red.

[Experimental study of breaking rock by blasting] Eksperimental'nye issledovaniia protsessa razrusheniia porod vzryvom. Frunze, Izd-vo AN Kirgizskoi SSR, 1961. 133 p. (MIRA 14:11)
(Blasting)

BARANOV, Ye.G., kand.tekhn.nauk; MOSINETS, V.N., kand.tekhn.nauk

Practice of using simple explosives in working ore deposits.
Vzryv. delo no.47/4:112-117 '61. (MIRA 15:2)

1. Institut gornogo dela i metallurgii AN Kirgizskoy SSR.
(Explosives) (Ore deposits)

SHESTAKOV, V.A.; SEKISOV, G.V.; BARANOV, Ye.G.

New method of determining the boundaries of open mining operations. Izv. AN Kir. SSR. Ser. est. i tekh. nauk 3 no.3:47-63 '61. (MIRA 15:3)

(Strip mining)

BARANOV, Ye.G., kand.tekhn.nauk; MOSINETS, V.N.; PODOYNITSYN, Ye.M., gornyy inzhener; KLAPOVSKIY, V.Ye., gornyy inzhener

Study of the parameters of large-scale blasting in Kirghiz open-pit mine workings. Vzryv. delo no.50/7:131-141 '62. (MIRA 15:9)

1. Institut gornogo dela i metallurgii AN Kirgizskoy SSR.
(Kirghizistan--Blasting)
(Rocks--Testing)

MOSINETS, Vladimir Nikolayevich; SEMIKINA, T.F., red.izd-va; BARANOV, Ye.G., otv. red.; POPOVA, M.G., tekhn.red.

[Energy producing and correlative linkages in the rock breaking process by blasting] Energeticheskie i korreliatsionnye sviazi protsessa razrusheniia porod vzryvom. Frunze, Izd-vo AN Kir.SSR, 1963. 231 p. (MIRA 17:1)

BARANOV, Ye.G.; TANGAYEV, I.A.; YAKOVLEVA, N.A.

Study of the process of the displacement of ores and rocks in blasting under conditions of complex deposits. Izv. AN Kir. SSR. Ser. est. i tekh. nauk 5 no.1:7-23 '63. (MIRA 16 :11)

BA[illegible]NOV, Ye.G., kand. tekhn. nauk; [illegible], V.N., kand. [illegible]

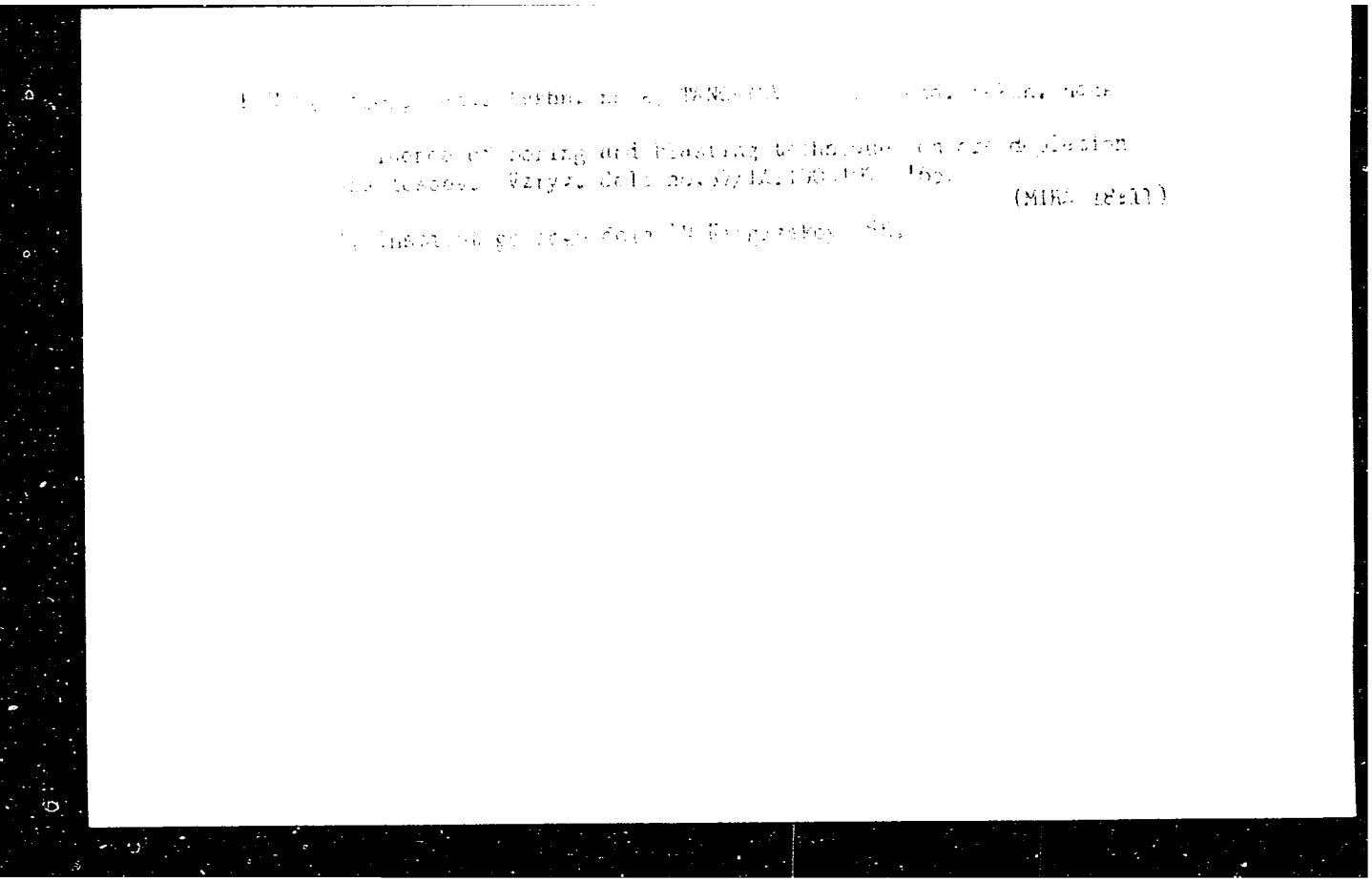
Method of [illegible]ting with preliminary [illegible] of the [illegible] [illegible]. Gor. zhur. no.7:30-34 [illegible] (MIRA 17:10)

1. Institut [illegible] i [illegible] gornykh porod AN [illegible].

BAKANOV, Ye.G., kand. tekhn. nauk; PODOYNITSYN, Ye.M.

Estimating the efficiency of boring and blasting operations in the working of ore rock and stone in nonferrous metal mines. Vzryv. delo no.57/14:173-181 '65. (MIRA 18:11)

1. Institut gornogo dela i metallurgii AN Kirgizskoy SSR.



(MIRV detail)

ACC NR: AP6034002 (N) SOURCE CODE: UR/0213/66/006/005/0770/0775

AUTHOR: Baranov, Ye. I.; Shmatko, M. A.

ORG: Kaliningrad Branch of the Institute of Oceanography, AN SSSR (Kaliningradskoye otdeleniye Instituta okeanologii AN SSSR)

TITLE: Studies of the thermal structure in the Gulf Stream frontal zone

SOURCE: Okeanologiya, v. 6, no. 5, 1966, 770-775

TOPIC TAGS: oceanography, ocean temperature, hydrography, ~~automatic structural analyzer~~, ~~ocean~~/Gulf Stream

ABSTRACT: Continuous records are analyzed of surface water temperature obtained in March 1963 along the profiles running across the Gulf Stream frontal zone. Maximum values of horizontal temperature gradients are given. For the statistical characteristic of the temperature field in the Gulf Stream, frontal zone modular structural functions of temperature were computed with the aid of an automatic structural analyzer. Distribution functions have been computed to characterize the scales of temperature inhomogeneities. Orig. art. has: 5 figures.

SUB CODE: 08/ SUBM DATE: 13Nov64/ ORIG REF: 002/ OTH REF: 001

Card 1/1 UDC: 551.465.75:551.552(2628)

L0731

5.3832

S/062/62/000/009/008/009
B119/B186

AUTHORS: Sosin, S. L., Korshak, V. V., Vasnev, V. A., and Baranov, Ye.L.

TITLE: Synthesis of polymers from nitriles of aliphatic acids

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 9, 1962, 1644 - 1650

TEXT: Cyanoacetic methyl ester (I), malonic dinitrile (II), and adipic dinitrile (III) were each of them polyrecombined by heating to 200°C in the presence of tertiary butyl peroxide. The resulting polymers underwent elementary analysis. Their IR and EPR spectra were studied and the probable reaction scheme was plotted from the data so obtained. I yielded a black powdery polymer soluble in dimethyl formamide, having a molecular weight of 5400 - 7300 (depending on the peroxide amount used); softening temperature 500°C; 70 % yield at a molar ratio peroxide : I = 1.5 : 1; reaction scheme

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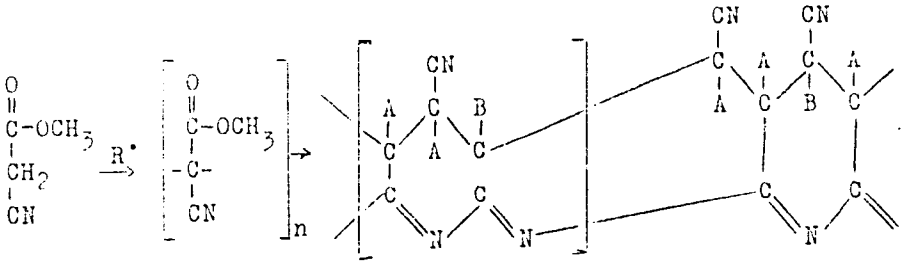
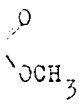
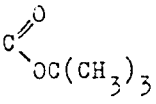
B119/B186

Synthesis of polymers from ....

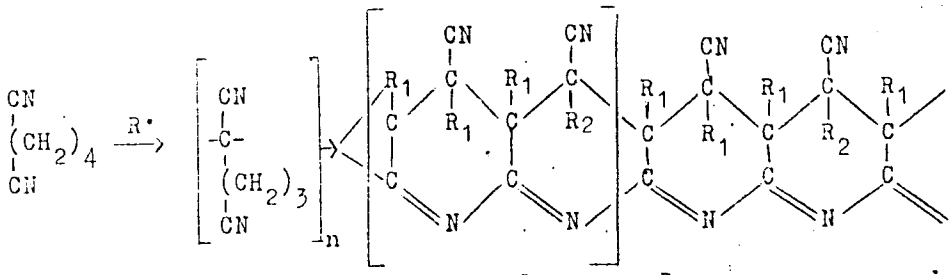


n = 35 - 75; A =  ; B = 

II gave a black powder soluble in dimethyl formamide; molecular weight 11,000; softening temperature 100°C; 50 % yield at a molar ratio peroxide : II = 1.5 : 1; reaction scheme

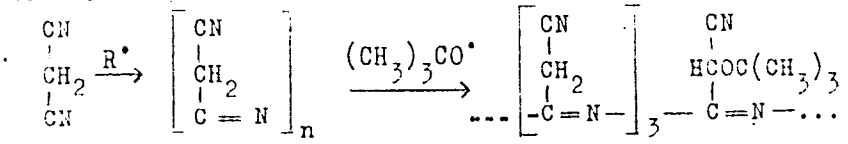
Card 2/4

Synthesis of polymers from ...



n = 104; $R_1 = (CH_2)_3CN$; $R_2 = CH\left[OC(CH_3)_3\right](CH_2)_2CN$

III too gave a black powder soluble in dimethyl formamide; molecular weight 5500 (maximum 6200 after fractionation); softening temperature 500°C; 75 % yield at a molar ratio peroxide : III = 0.4 : 1; reaction scheme



Card 3/4

Synthesis of polymers from ...

n = 85-94. The volume resistivity of the polymer from II increases exponentially with temperature (conductivity at 0°C: $5.37 \cdot 10^{-12}$ ohm^{-1}·cm^{-1}; at 20°C: $2.32 \cdot 10^{-11}$ ohm^{-1}·cm^{-1}). There are 4 figures and 1 table. The most important English-language reference is: N. Grassil, J. C. McNeill, J. Pol. Sci. 27, 207 (1958).

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Elemental Organic Compounds of the Academy of Sciences USSR)

SUBMITTED: March 1, 1962

L 27406-65 EWT(m)/EPF(c)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4 RPL RM/WW

ACCESSION NR: AP5004595 S/0020/65/160/002/0349/0351

AUTHOR: Korshak, V. V.; Frunze, T. M.; Kurashev, V. V.; Baranov, Ye. L. 31 28 B

TITLE: Synthesis of graft copolymers of styrene with caprolactam

SOURCE: AN SSSR. Doklady, v. 160, no. 2, 1965, 349-351

TOPIC TAGS: graft copolymer, styrene copolymer, caprolactam copolymer, block copolymerization, methacryloylcaprolactam

ABSTRACT: The object of this study was to establish the optimum conditions (amount of the catalytic system and degree of conversion) for copolymers of different compositions in block copolymerization. To determine the amount of the catalytic system necessary and sufficient to prepare a copolymer with ε-caprolactam at a content of 2 to 50% of added styrene (or the number of imide groups in the copolymer of styrene with N-methacryloylcaprolactam (MAC)), the authors prepared copolymers containing from 0.9 to 10% of the imide component. Infrared spectroscopy was used to determine the number of imide groups. Assuming that the optimum amount of the catalytic system present during the polymerization of ε-caprolactam was 0.2 mole % of the latter, the authors found that, as the amount of

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L 27406-65

ACCESSION NR: AP5004595

styrene introduced into the graft copolymer increases, the number of imide groups present in the copolymer of styrene with MAC increases in proportion to tanα, α being the angle of the slope formed by the straight line representing the amount of the catalytic system versus the amount of styrene introduced. Orig. art. has: 2 figures and 1 table.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Organoelemental Compounds, Academy of Sciences, SSSR)

SUBMITTED: 25Aug64 ENCL: 00 SUB CODE: GC, OC

NO REF SOV: 005 OTHER: 007

Card 2/2

L 8152-66 EWT(m)/EWP(j)/T RPL WW/RM

ACC NR: AP5027689 SOURCE CODE: UR/0062/65/000/010/1860/1866

AUTHOR: Baranov, Ye. L.; Frunze, T. M.; Kurashev, V. V.

ORG: Institute of Organo-elemental Compounds, Academy of Sciences SSSR (Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR)

TITLE: Graft copolymerization of styrene with epsilon-caprolactam in bulk

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 10, 1965, 1860-1866

TOPIC TAGS: copolymerization, polymerization rate, polymerization kinetics, block copolymer, radical polymerization, catalytic polymerization

ABSTRACT: Two stage graft copolymerization of epsilon-caprolactam with styrene to form copolymers containing 5-50% styrene was studied. Radical copolymerization of styrene with N-methacryloylcaprolactam in epsilon-caprolactam solution to form the macromolecular initiator is effected in the first stage. Epsilon-caprolactam is grafted onto the macromolecular initiator in the second stage upon addition of sodium-caprolactam as the second component of the catalyst system. In order to increase the amount of styrene in the graft copolymer the

UDC: 542.952

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L 8152-66

ACC NR: AP5027689

amount of the catalyst system must be increased proportionally; 0.2 mol% of catalyst is optimum for polymerization of the caprolactam alone. Copolymers formed using less catalyst have large (over 10%) amounts of water-soluble products. The graft copolymers are insoluble cross-linked products which swell in cresol and concentrated sulfuric acid. The reaction mechanism of the cross-link formation is to be reported later. Orig. art. has: 4 figures, 3 tables and 1 equation.

SUB CODE: MT, OC, GC/ SUBM DATE: 23Feb65/ ORIG REF: 000/ OTH REF: 008

nw

Card 2/2

L 16507-66 EWT(m)/EWP(j)/T WW/RM

ACC NR: AP6001490 (A) SOURCE CODE: UR/0191/65/000/012/0003/0006

AUTHORS: Korshak, V. V.; Frunze, T. M.; Kurashov, V. V.; Baranov, Ye. L.

ORG: none

TITLE: Synthesis of graft copolymers of styrene with ε-caprolactam in bulk by two-stage polymerization

SOURCE: Plasticheskiye massy, no. 12, 1965, 3-6

TOPIC TAGS: graft copolymer, copolymerization, catalytic polymerization

ABSTRACT: A method for synthesizing of graft polymers of styrene with ε-caprolactam is described. The method consists of consecutively treating the reaction mixture with polymerization catalysts of anionic and radical character. In the first stage of the process styrene is copolymerized with N-methacryloylcaprolactam (catalytic amounts) in ε-caprolactam solution, using a radical type initiator (e.g., benzoyl peroxide). The second stage is initiated by addition of sodium. The graft copolymer has the structure:

Card 1/2 UDC: 678.675'126-134.622

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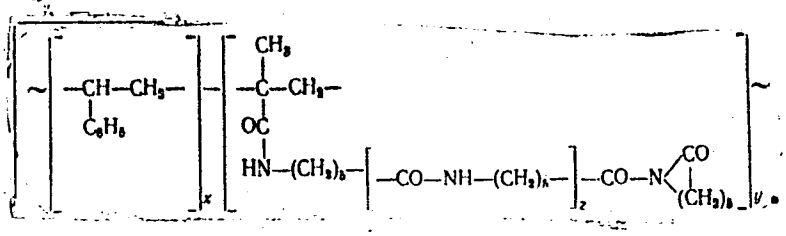
ACC NR: AP6001490



Physical and mechanical properties of the copolymers obtained by varying the ratio of starting materials and the concentration of the catalytic system (sodium caprolactam and N-methacryloylcaprolactam) have been investigated. The authors express their gratitude to co-workers from VNIITUglemash for physical and mechanical testing of the copolymer samples. Orig. art. has: 3 tables, 2 figures, and 3 structures.

SUB CODE: 07/ SUBM DATE: none/ ORIG REF: 002/ OTH REF: 006

Card 2/2 SM

L 18568-66 EWT(m)/EWP(j)/T/ETC(m)-6 WW/RM

ACC NR: AP6002428 (A) SOURCE CODE: UR/0020/65/165/005/1088/1090

AUTHORS: Korshak, V. V. (Corresponding member AN SSSR); Manucharova, I. F.; Frunze, T. M.; Buranov, Ye. L.

ORG: Institute for Heteroorganic Compounds, Academy of Sciences SSSR (Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR)

TITLE: Determination of the degree of crystallinity in styrene-ε-caprolactam graft copolymers by a calorimetric method, and the investigation of their thermostability 7,44,55

SOURCE: AN SSSR. Doklady, v. 165, no. 5, 1965, 1088-1090

49

TOPIC TAGS: polymer, crystalline polymer, graft copolymer, polyamide

ABSTRACT: The degree of crystallinity in styrene-ε-caprolactam graft copolymers as a function of the copolymer composition and of molecular weight was determined by a thermogravimetric method. The experimental procedure followed that described by K. A. Andrianov and I. F. Manucharova (Izv. AN SSSR, OKhN, 1962, 420). X-ray pictures of the synthesized polymers are presented. The experimental results are shown in graphs and tables (see Fig. 1). The degree of crystallinity was calculated by the expression G = 2.33 Q, where G is the degree of crystallinity

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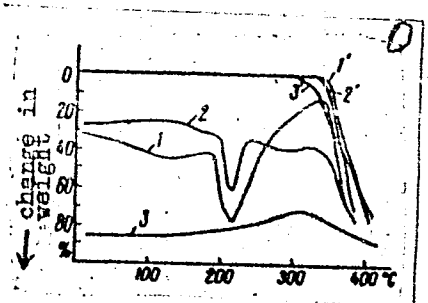
ACC NR: AP6002428

Fig. 1. Curves for weight loss (1', 2', 3') and differential temperature change (1, 2, 3) for the polymers: 1,1'-poly- ε-caproamide; 2,2' graft copolymer, containing styrene and caprolactam in the ratio 20:80 (parts by weight); 3, 3'polystyrene.



in % and Q is the heat of fusion in cal/g. It is concluded that the above formula may be used to determine the degree of crystallinity in any graft copolymers of ε-caprolactam and amorphous co-component. For other starting reagents, the formula differs from the above only in the different value of the empirical constant. Orig. art. has: 1 table and 5 graphs.

SUB CODE:07, 11/SUBM DATE: 30Jun65/ ORIG REF: 019/ OTH REF: 002

Card 2/2 fm

L 22750-66 EWT(m)/EWP(j)/T IJP(c) WW/RM
ACC NR: AP6010109 (A) SOURCE CODE: UR/0190/66/008/003/0455/0460

AUTHORS: Frunze, T. M.; Korshak, V. V.; Baranov, Ye. L.; Lokshin, B.V.

ORG: Institute of Organoelemental Compounds, AN SSSR (Institut elementoorganicheskikh soyedineniy AN SSSR)

TITLE: Copolymerization of styrene with N-methacryloylcaprolactam in the presence of ε-caprolactam

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 3, 1966, 455-460

TOPIC TAGS: caprone, styrene, copolymerization, copolymer, chain polymer, monomer

ABSTRACT: The copolymerization of styrene with N-methacryloylcaprolactam (MACL) has been investigated. The optimum copolymerization conditions were established. The empirical dependence of the MACL in the copolymer on the amount in the feed mixture was found. The reactivities of these monomers during copolymerization in ε-caprolactam solution were determined. The chain transfer constant through ε-caprolactam was determined. It is shown that ε-caprolactam does not considerably affect the chain growth and that it is a suitable solvent for the reaction. Orig. art. has: 3 figures and 5 tables. [Based on author's abstract] [NT]

Card 1/2 UDC:66.095.26+678.13+678.675+678.746

L 22750-66

ACC NR: AP6010109

SUB CODE: 07/ SUBM DATE: 30Mar65/ ORIG REF: 002/
OTH REF: 003/

Card 2/2 UDC

L 41715-66 EWT(m)/EWP(j)/T IJP(c) WW/RM

ACC NR: AP6019530 (A) SOURCE CODE: UR/0020/66/168/004/0825/0827

AUTHOR: Rode, V. V.; Korshak, V. V. (Corresponding member AN SSSR); Frunze, T. M.; Baranov, Ye. L.; Balykova, T. N.

ORG: Institute of Organoelemental Compounds, Academy of Sciences, SSSR (Institut elementoorganicheskikh soyedineniy akademii nauk SSSR)

TITLE: Thermooxidative destruction of the graft copolymers of styrene with epsilon-caprolactam

SOURCE: AN SSSR. Doklady, v. 168, no. 4, 1966, 825-827

TOPIC TAGS: copolymer, polystyrene, oxidation kinetics, block copolymer, heat resistance, GRAFT COPOLYMER, STYRENE, OXIDATIVE DEGRADATION

ABSTRACT: The kinetics of oxidative degradation of styrene-caprolactam graft copolymers was studied. 0.05 g samples of copolymers containing 10, 20, and 33% styrene were oxidized in an oxygen stream at 300-375°C. It was found that the stability of the styrene-caprolactam copolymers to oxidative degradation increases with increasing content of caprolactam. It was also found that the content of alkaline catalyst in the copolymer has practically no effect on the stability of the styrene-caprolactam copolymer. The kinetic data are graphed and tabulated. Orig. art. has: 2 figures, 2 tables.

SUB CODE: 07/ SUBM DATE: 15Nov65/ ORIG REF: 007/ OTH REF: 003

Card 1/1 UDC: 541.66

ACC NR: AP7006718 (A) SOURCE CODE: UR/0113/66/000/012/0029/0031

AUTHOR: Baranov, Ye. N.; Bocharov, N. F. (Candidate of technical sciences); Semenov, V. M. (Candidate of technical sciences); Toloknov, O. A. (Candidate of technical sciences); Boshnyak, V. A.; Makarov, S. G.; Boldarev, T. A.

ORG: MVTU im. Bauman; NAMI; Moscow Electric Machine Building Plant (Moskovskiy elektromashinostroitel'nyy zavod)

TITLE: Design of a motorized wheel with electric drive for installation in pneumatic tires on automotive vehicles

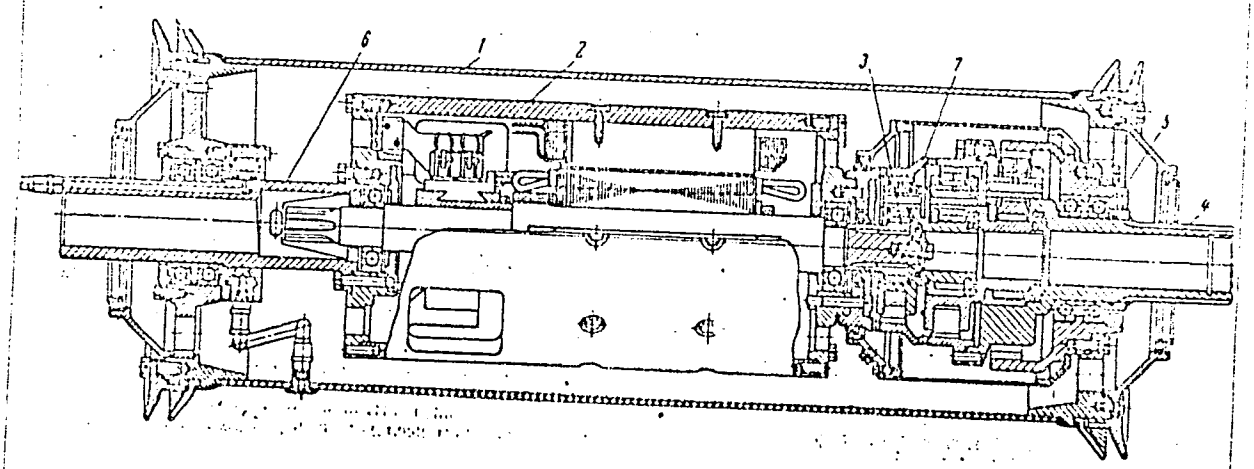
SOURCE: Avtomobil'naya promyshlennost', no. 12, 1966, 29-31

TOPIC TAGS: vehicle power transmission system, tire, vehicle engineering, drive train

ABSTRACT: The authors describe a motorized wheel developed in the "wheeled vehicles" department of the Moscow Technical College im. Bauman for installation in the I-245 pneumatic tire. This tire is 1000 mm in diameter and 1000 mm wide with a 305 mm mounting hole. A diagram of the motorized wheel is shown in the figure. The power assembly of the unit is located inside the rim *1* of the tire which is a tube with welded flanges. The power assembly consists of electric motor *2* and speed reducer *3*. A DI-33K DC electric traction motor is used with a power of 16 kw at 220 volts. The

Card 1/3 UDC: 629.113-585.3

ACC NR: AP7006718



Card 2/3

ACC NR: AP7006718

rated speed of the motor is 4000 rpm with a maximum of 6000 rpm. The unit is 238 mm in diameter and weighs 106 kg. The speed reducer has 3 rows of planetary gears with a transmission ratio of 31.2. This type of speed reducer has the lowest weight and size for a given transmission ratio and efficiency. Orig. art. has: 2 figures, 1 table, 7 formulas.

SUB CODE: 13 / SUBM DATE: None/ ORIG REF: 005

Card 3/3

BARANOV, Yu., dotsent; GAMOV, A., starshiy prepodavatel'

Distance of visibility of objects at sea. Mor. flot 22 no.5: 9-10 My '62. (MIRA 15:5)

1. Leningradskoye vyssheye inzhenernoye morskoye uchilishche imeni admirala S.O.Makarova.
(Visibility)

BARANOV, Yu., dotsent; ORESHKIN, K., starshiy nauchnyy sotrudnik

Infrared techniques to serve the merchant marine. Mor. flot 22 no.6:11-13 Je '62. (MIRA 15:7)

1. Leningradskoye vysshoye inzhenernoye morskoye uchilishche im. admirala Makarova (for Baranov). 2. Leningradskiy institut vodnogo transporta (for Oreshkin).
(Infrared rays---Industrial applications)
(Merchant marine---Equipment and supplies)

BARANOV, Yu., dotsent; GAMOV, A., dotsent

Determining the circulation of the vessel by photographing the radar screen. Mor. flot 25 no.5:22-24 My '65. (MIRA 18:5)

1. Leningradskoye vyssheye inzhenernoye morekhodnoye uchilishche imeni admirala S.O. Makarova.

BARANOV, Yu. (pos.Kukushtan, Permskoy obl.)

Stop Bykov! Sov. profsoiuzy 19 no.12:24-25 Je '63. (MIRA 16:8)
(Kukushtan--Lawyers--Discipline)

ACC NR: AP7000350 SOURCE CODE: UR/0413/66/000/022/0115/0116

INVENTOR: Goron, I. Ye.; Baranov, Yu. A.; Dembinskiy, V. F.; Merkin, I. Kh.; Pankov, G. A.; Penchuk, N. V.; Smolyanitskiy, V. Z.; Volkov, Yu. D.

ORG: none

TITLE: Electromagnetic flaw detector. Class 42, No. 188737

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 22, 1966, 115-116

TOPIC TAGS: flaw detector, magnetic flaw detector, magnetic field ~~configuration, magnetic field recording~~ flaw detection, electromeasuring device, electromagnetic device

ABSTRACT: This Author Certificate introduces an electromagnetic flaw detector containing 1) a primary magnetic flux conductor for magnetizing the inspected article, 2) a secondary magnetic flux conductor for duplicating the magnetic field configuration of the article surface, 3) generators with alternating magnetic field ensuring hysteresis-free transfer of the magnetic field configuration, and 4) magnetic recording heads. To inspect shaped articles, the conductor is clamped to the article with elastic rings stretched over the article. To maintain its cylindrical shape, the secondary conductor is enclosed in a vacuum shell. Orig. art. has: 1 figure.

SUB CODE: 14,09/SUBM DATE: 11Aug65/

Card 1/1 UDC: 620.179.14.08

BARANOV, Yu.B.; BARANOVA, Ye.N.; BOBROVSKIY, V.I.; GRISHCHENKO, G.I.; GONCHAR, G.V.; DOLBISH, V.S.; KALINOVSKIY V.S.; KARAKOTSKIY, Ye.D., KULICHKOV, G.M.; KAGANOVSKAYA, S.M.; LESTEV, A.V.; METELKIN, L.I.; TIKHONRAVOV, V.M. [deceased]; DOLBISH, V.S., spetsred.; KUZ'MINA, V.S., red.; KISINA, Ye.I., tekhn.red.

[Fishing equipment used in Far Eastern waters] Orudiia rybolovstva Dal'nevostochnogo Basseina. Moskva, Pishchepromizdat, 1958. 214 p. (MIRA 11:12)
(Soviet Far East--Fishing--Equipment and supplies)